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J. Zahn mentions something more singular than this, of an engineer of Vienna, in 1699, who made a mirror of paste-board, covered on the inside with straw cemented to it, which was so powerful as to fuse all metals.

Concave mirrors of a considerable diameter, and which produce the same effect as the preceding, may be now procured at much less expence; and for this we are indebted to M. de Bernieres. The concave mirrors he constructed were round pieces of glass bent into a spherical form; concave on the one side, the convex on the other, and silvered on the convex side. He constructed one for the King of France, three feet and a half in diameter, which was presented to his majesty in 1757. Forged iron exposed to its focus was fused in two seconds; silver ran in such a manner, that when dropped into water it extended itself in the form of a spider's web, &c.

Lenticular glasses have been made to produce similar effects. Tchirnhausen constructed one of this kind of very large dimensions. Being near the Saxon glass manufactories, he was enabled about 1696 to procure plates of glass so as to form lenses several feet in diameter. One of them, of this size, inflamed combustible substances at the distance of twelve feet. At that distance its focus was about one inch and a half, in diameter. But when it was required to make it produce its greatest effects, the focus was diminished by means of a second lens, placed parallel to the former, and at the distance of four feet.

In this manner the diameter of the focus was reduced to eight lines, and it then fused metals, vitrified flint, tiles, and in short, produced the same effects as the burning mirrors already spoken of.

For the means of obtaining at a less expence glasses capable of producing the same effects, we are again indebted to M. de Bernieres. His invention is, to bend two circular plates of glass into a spherical form, and being then applied to each other, the interval is filled with distilled water, or spirits of wine. These glasses, or rather, water lenses have their focus a little farther distant, and *ceteris paribus*, ought to produce a somewhat less effect? but the thinness of the glass and transparency of the water occasion less loss in the rays, than in a lens of several inches in thickness, and it is far easier to procure a lens of this construction, than solid ones like that of Tchirnhausen. M. de Trudaine, some years ago prevailed on M. de Bernieres, to construct one of those water lenses for him, four feet in diameter. The heat produced by this instrument is much superior to that of all the burning glasses and mirrors hitherto known, and even exceeds that of furnaces.

Such are Montucla's account and observations, as Dr. Hutton has translated him. These inventions and experiments have been made a great many years, and when it is considered how desirable it is on many occasions to procure a great melting or burning power, it may justly seem surprising, that they have not been placed beyond the bounds of mere gratification of curiosity, and made subservient to some useful purposes. Chemists might surely find the burning glass, made to form such a focus as might be required, useful in fusing specimens of those metals, which are most difficult to be fused; and we need make very little doubt, but that when skill in forming glass to required dimensions and facility in the use of them were attained, many of the disagreeable and laborious operations of the furnace might be laid aside, and much time also gained.

To the Editor of the Belfast Magazine.

SIR,

IT is universally allowed, that to read and speak well, are very pleasing and valuable accomplishments. To professional men who have to deliver discourses or pronounce speeches in public, they are of the greatest consequence, as a good style of elocution is now generally expected from them, and considerably contributes to their success in life. But to such persons the advantages of elocution are by no means confined. Occasions perpetually occur, in which they are perceived and felt by persons in every condition of life. To every family circle, a few good readers are a valuable acquisition; and furnish it with the means of promoting a taste for instructive reading, and the diffusion of useful knowledge. What might other-

wise be disgusting and disagreeable, is rendered by persons of cultivated taste, a delightful source of pleasure and improvement. How different do the same sentiments and language appear from readers or speakers of different talents! We are pained to hear a bad reader spoil the effect of good composition; and we listen with rapture to the sweet modulation and forceful expression of the accomplished rhetorician. From a person destitute of taste in this particular, the finest sentiments drop without effect; and the most eminently beautiful passages even of a Shakespeare or a Milton lose their charms; while the elegant and impressive speaker communicates additional lustre to every thought, and gives to simple phrase a force and beauty before unknown.

It is justly conceived, that it is a very desirable thing to be able to speak in an elegant and pleasing manner in conversation. Let such as wish to attain this enviable accomplishment pay attention to elocution; for it is unquestionable, that the manner in which a person is accustomed to read, will considerably affect his manner of conversing. The same affectation, or the same simplicity, the same awkwardness, or the same elegance will probably appear in both.

English teachers have latterly testified a becoming attention to the instruction of their pupils in elocution. Several men of talents have given useful rules and directions to promote a knowledge of this valuable art: and masters of schools and academies have offered premiums for the best specimens of reading and recitation. But it seems strange that that distinction of vocal sounds, which is the very ground-work of elocution, should have been hitherto so generally neglected. The inflexions of the voice were first accurately described by Mr. Walker, author of the Pronouncing Dictionary, who flattered himself that his discoveries would be attended with the happiest effects. But in his preface to the third edition of his Rhetorical Grammar, he remarks; "The sanguine expectations I had once entertained, that this analysis of the human voice would be received by the learned with avidity and applause, are now over; I have almost worn out a long life in laborious exertions, and though I have succeeded beyond expectation in forming readers and speakers in the most respectable circles in the three kingdoms, yet I have had the mortification to find few of my pupils listen to any thing but my pronunciation. When I have explained to them the five modifications of the voice, they have assented and admired; but so difficult did it appear to adopt them, especially to those advanced in life, that I was generally obliged to follow the old method, (if it may be called so) "Read as I read, without any reason for it." But without pretending to the gift of prophecy, I think I can foresee, that sooner or later these distinctions must become the vehicle of instruction in reading and speaking. It is not improbable, that the active genius of the French, who are so remarkably attentive to their language, may first adopt this vehicle; and if this should happen, I hope it will be remembered, that an unassisted and unpatronized Englishman was the first who discovered and explained it."

The teacher of Elocution in the College of Glasgow having studied under Mr. Walker, has adopted his system, and teaches according to the method laid down in the Rhetorical Grammar, and the Elements of Elocution. But I do not know of any teacher in this country who has followed his example. A few copies of Mr. Walker's Rhetorical Grammar are to be found with some literary gentlemen; but no person, as far as I know, has proposed to teach on Mr. Walker's plan, though it may be positively asserted, that nothing at all equal to it has hitherto appeared.

As a friend to every thing which has a tendency to improve the art of Reading, I should sincerely rejoice, from a conviction which I have of its great usefulness, to see Mr. Walker's system introduced. To your town where every thing connected with education is so minutely attended to, and where there are so many respectable teachers, I look with hope. I cannot persuade myself that such a valuable improvement has been so long neglected,

on any other account than that its beneficial tendency has not been hitherto justly ascertained. I trust that the attention of the ingenious will in a short time be directed to a mode of teaching elocution, as yet very little known, and which appears to me, from a careful examination of the subject, to have truth, simplicity, and utility to recommend it.

As some persons are apt to confound the terms *high and low* with *loud and soft*, it may be proper in giving a brief view of Mr. Walker's system of inflexion, to point out the distinction between them. The terms high and low, refer to the situation of tones in the musical scale; and the terms loud and soft, refer to the degree of force with which tones are produced. Hence it is manifest, that tones may be high and soft or loud and low, at the same time. By moving the hand up and down the keys of a piano forte, any person may form an idea, of what is meant by high and low when speaking of sounds; and by striking any particular key with unequal degrees of force, may perceive what is meant by loud and soft, in reference to music or speech.

The tones of the voice, according to Mr. Walker, are capable only of three states. They must either continue at the same height, or they must slide upwards or downwards in the scale. The first of these states of the voice is called the *monotone*; the second the *rising inflexion*, and the third, the *falling inflexion*. When the voice falls and rises, or rises and falls on the same syllable, it forms what is called the *circumflex* inflexion. These inflexions are expressed by the following characters.

Monotone, ... —
Rising inflexion, ... /
Falling inflexion, ... \
Rising circumflex, ... ⌣
Falling circumflex, ... ⌢

"The *monotone* in certain solemn and sublime passages in poetry, has a wonderful force and dignity; and by the uncommonness of its use, it even adds greatly to that variety with which the ear is so much delighted.

"High on a throne of royal state, which far
Outshone the wealth of Ormus or of Ind;
Or where the gorgeous East, with richest hand,
Show'rs on her kings, barbaric pearl and gold,
Satan exalted sat."

"The rising inflexion is that upward turn of the voice we generally use at the comma, or in asking a question beginning with a verb; as Nó, say you? did he say Nó? It is used to mark a suspension of sense, and therefore may be perceived in the following sentence, on the word *foundation*.

"Though the peace and tranquillity of this nation, both at home and abroad, be now, by his majesty's wise conduct, established, in all probability, on a firm and lasting foundation, yet a wise people ought always to be upon their guard against the worst that may happen."

It is also used at the close of interrogative sentences not beginning with interrogative words.

"Have we destroyed the fleets of our enemies, fired their towns, and laid their fortresses in ruins?"

It may be thought from an inflexive mark being on a particular word, that that word alone is affected by the inflexion, but all that is meant is, that it appears more remarkable on that word than any other; or because that word closes the member which is to be pronounced with a particular inflexion: for in fact inflexion affects the whole member of a sentence; and every one who has the least idea of the subject, knows, that it is necessary to prepare for a particular inflexion strongly marked at the close of a member by giving the preceding words a cast of voice peculiar to that inflexion.

But though the inflexions may be said to affect every word of a sentence, they are no where so perceptible as at a long pause, or on an emphatical word.

"Prevaricating, false—most courteous tyrants;
Romans, rare patterns of humanity!
Came you then here thus far thro' waves to conquer,
To waste, to plunder, out of mere *compassion?*

It also deserves to be remarked, that the accented syllable of a word is that on which the inflexion most remarkably appears. Thus, in the preceding

example, a judicious reader will add greatly to the effect, by marking with strong emphasis, and the rising inflexion very acute, the penultimate syllable of the word *compassion*.

The *falling* inflexion is generally used at the colon and semicolon; and is that which is always used at the close of a declarative sentence.

"The whole is greater than a part."

For the purpose of ascertaining the inflexions proper to the members of different sentences, Mr. Walker points out a three-fold division of sentences.

A *direct period* requires the rising inflexion at the end of the first principal constructive member.

"As his Majesty has summoned a new parliament, and has been graciously pleased to communicate his intentions to *us*, by the speech we have just heard, it seems absolutely necessary for us to vote an address of thanks."

An *inverted period* is a sentence in which the first part forms perfect sense in itself, but is modified by the latter. It requires the rising inflexion immediately before the modifying member.

"Persons of good taste expect to be pleased, at the same time they are informed."

A loose sentence consists of a period, either direct or inverted, and an additional member which does not modify it. It requires the falling inflexion, immediately before the modifying member. The voice, however, must not be suffered to fall away as at a period, but must be kept up, so as to leave an expectation that something is to follow.

"Persons of good taste expect to be pleased, at the same time they are informed; and think that the best sense always deserves the best language."

To these rules there are exceptions, which in this sketch it is not necessary to particularize.

INTERROGATIVE SENTENCES.

When an interrogative sentence commences with an interrogative word, it is pronounced as a declarative sentence.

"How can he exalt his thoughts to any thing great or noble, who only believes that after a short turn on the stage of this world, he is to sink into oblivion, and lose his consciousness for ever?"

When an interrogative sentence is formed without an interrogative word, it must end with the rising inflexion.

"Can he exalt his thoughts to any thing great or noble, who only believes, that after a short turn on the stage of this world, he is to *sink into oblivion*, and lose his consciousness for ever?"

EXCEPTIONS.

1. When interrogative sentences connected by the disjunctive *or*, succeed each other, the first ends with the rising and the next with the falling inflexion.

"Shall we in your person crown the author of the public calamities, or shall we destroy him?"

2. When an interrogative sentence ends a paragraph, it obtains the falling inflexion.

Mr. Walker goes on to consider the proper application of the inflexions to the *series*; and by the rules which he prescribes introduces such a varied and pleasing expression into this difficult subject, as is justly deserving of admiration.

The rising circumflex inflexion may be exemplified by the drawling tone we give to some words spoken ironically; as the word *Clodius*, in Cicero's oration for Milo.

"But it is foolish in us to compare Drusus, Africanus, and ourselves, with Clodius; all our other calamities were tolerable, but no one can patiently bear the death of Clodius."

The falling circumflex is generally used to express reproach; and may be exemplified by the drawling tone we hear on the word *you* in Hamlet's answer to his mother.

Queen. Hamlet, you have your father much offended.

Hamlet. Madam, you have my father much offended.

Both these inflexions may be exemplified in the word *so*, in a speech of the Clown in Shakespeare's *As you like it*.

"I knew when seven justices could not take up a quarrel; but when the parties were met themselves, one of them thought but of an If; as if you said so, then I said so; Oh ho! did you so? So they shook hands and swore brothers."

This brief account of some of the chief particulars of Mr. Walker's sys-

tem of inflexion will, I trust, be sufficient to excite the curiosity of students of elocution. It is surely deserving of an impartial trial, and should not be rejected without examination. For my own part, I am convinced that there is no *mode*, that there can be no mode of teaching boys to read, equal to that which Mr. Walker has pointed out. The subject is now reduced to rule and method; so that a teacher is enabled to communicate instruction to his pupils in the most distinct and specific manner. The rules are deduced from the reason of the human voice, and the perception of harmony which is familiar to every good ear; and must therefore lead those who suffer themselves to be directed by them, directly to the delightful path of truth and nature. In short, I consider Mr. Walker's discoveries worthy of forming a new era in the history of one of the most elegant and ornamental arts that can occupy the attention of mankind.

A. Z.

For the Belfast Monthly Magazine.

ON the important subject of Catholic Emancipation, I perceive that you in general, hold liberal sentiments. It is surely a measure, which not only justice, but the maxims of the soundest policy require to be adopted. It is however a subject perplexed with difficulties arising from the passions of the two opposite parties. Be it your plan to go straight forward without suffering yourselves to be drawn aside to either hand. Like the great Statesman, whose death at this crisis these countries have so much cause to deplore, do you in your more humble station, establish your character on the same stable basis, as the enlightened Fox.

"A Patriot's even course he steer'd,
'Midst faction's wildest roar unmov'd."

I have read with much attention your critique on Parnell's History of the Penal Laws, and for the most part, I agree with the writer: but on two points I felt considerable disappointment and dissatisfaction. I do not approve of the attempt by a side wind to palliate the infraction of the treaty of Limerick, and still less of the sophistry employed to justify the enactment of the penal laws against the Catholics, although the continuance of them is so justly reprobated by the reviewer. If they are now unjust they were so always. We may admit some palliation from the temper of the times, and the mutual irritation of all parties, but these considerations will not amount to a justification of the enactment of an iniquitous code, unjust in the first rise, and accumulating injustice in its progress, nor sanction the cruelty of "finding a bill of indictment against a whole people". If the Catholics of that day acted wrong, and were then the supporters of the arbitrary house of Stuart, the penal laws were not the proper correctives of their error: they were founded in injustice, and consequently do not admit of a defence in this period of greater liberality.

Having thus expressed my opinions on a subject treated on in a manner apparently hostile to the Catholics, I request the liberty of making some remarks on another article, in which the writer appears to have flattered the prejudices of the Catholic body. I allude to the political retrospect for last month, under the head Ireland. The writer after objecting to the union, more on the score of the bubble of national honour, than a just appreciation of its advantages and disadvantages, commercial and political, praises the Catholics for continuing independent of the crown of Britain in the appointment of their Bishops, while he commends them for their dependence on the See of Rome. To such inconsistencies do writers fall, when they view things only through the magnifying glass of party prejudices. In the eye of sober reason, there exists no sufficient cause why the Irish Catholics should not choose their own Bishops, independent of any extraneous influence, either of the king or the pope. The present manner of appointing Catholic Bishops, under the influence of the pope, partakes no more of a free election than the *Congé d'elire* of the English bishops. In both there is the appearance, but not the reality of an election. How liable is human nature to fall into extremes! The